# LIBBY AREA OFFICE STORAGE BUILDING

LIBBY, MONTANA FWP PROJECT #7179101

### SHEET INDEX

TITLE SHEET	T1
SITE PLAN	C1
NOTES AND DETAILS	C2
BUILDING FOUNDATION PLAN	C3
BUILDING ELEVATIONS	C4
BUILDING SECTIONS	C5
ELECTRICAL PLAN	E1
ELECTRICAL PLAN	E2

### CIVIL SITE DESIGN BY:

LARSON CIVIL ENGINEERING, LLC

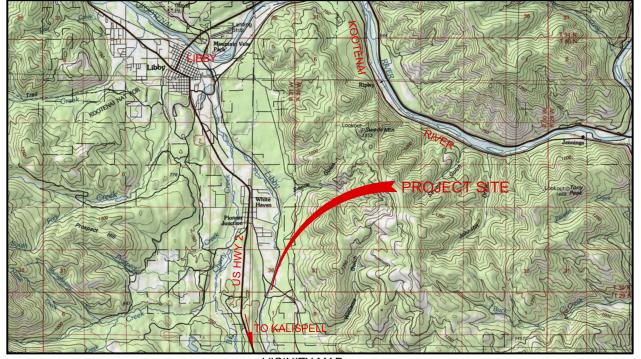
### **ELECTRICAL DESIGN BY:**

AMES ENGINEERING

## ARCHITECTURAL REVIEW BY:

SLATE ARCHITECTURE

CODE	ANALYSIS	
CODES:	EXTERIOR WALL PROTECTION:	IBC TABLE 602
BUILDING:  2012 INTERNATIONAL BUILDING CODE (IBC) MECHANICAL: 2012 INTERNATIONAL MECHANICAL CODE (IMC) PLUMBING: 2012 UNIFORM PLUMBING CODE (IMPO) ELECTRICAL: 5014 NATIONAL ELECTRICAL CODE (NEC) FIRE: ENERGY: 2012 INTERNATIONAL FIRE CODE 2012 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2014 INTERNATIONAL FIRE CODE 2014 INTERNATIONAL FIRE CODE 2015 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2016 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2017 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2019 INTERNATIONAL ENERGY CODE (IECC) 2019 I	NONE REQUIRED  FLAME SPREAD:  EXIT ENCLOSURE & PASSAGEWAYS B  CORRIDORS B	BC TABLE 803.9
BUILDING AREA:	ROOMS AND ENCLOSED SPACES C	
TOTAL BUILDING AREA 2,560 S.F	AUTOMATIC SPRINKLER SYSTEM:	IBC SECTION 903
OCCUPANCY: IBC SECT. 311	NONE	
"S-1" OCCUPANCY	EXITS:	IBC TABLE 1004.1.1
CONSTRUCTION TYPE: IBC TABLE 601 TYPE V-B	OCCUPANT LOAD; WAREHOUSES: 500 S.F. PER OCCUPANT	
PERMITTED: 9,000 SF/FLR (TABLE 503) ACTUAL AREA: 2,560 SF	OCCUPANT LOAD (NEW): 5	
OCCUPANCY SEPARATION: IBC TABLE 508.4		
NA NA	EXIT CALCULATION:	IBC CH. 10 - TABLE 1015
LOCATION ON PROPERTY:	2 EXITS PROVIDED	
+30' OPEN SPACE	DISTANCE TO EXITS:	IBC SECTION 1016
FIRE RESISTANCE: IBC TABLE 601	200 FT. MAX.; LESS THAN 200 FT. PROVIDED	
STRUCTURAL FRAME EXTERIOR BEARING WALLS INTERIOR BEARING WALLS INTERIOR NONBEARING WALLS INTERIOR NONBEARING WALLS INTERIOR NONBEARING WALLS FLOOR CONSTRUCTION ROOF CONSTRUCTION	ROOF CONSTRUCTION: CLASS C - MINIMUM CLASSIFICATION	IBC TABLE 1505.1



ICINITY MAP

### PROJECT ADDRESS:

LIBBY AREA OFFICE MONTANA FISH, WILDLIFE AND PARKS 385 FISH HATCHERY ROAD LIBBY, MONTANA 59923



J. LARSON	MARCH 7, 2018
DRAWN BY:	DATE:
J. LARSON	MARCH 7, 2018

REVISED BY: DATE:

J. LARSON MARCH 7, 2018

APPROVED BY: DATE:

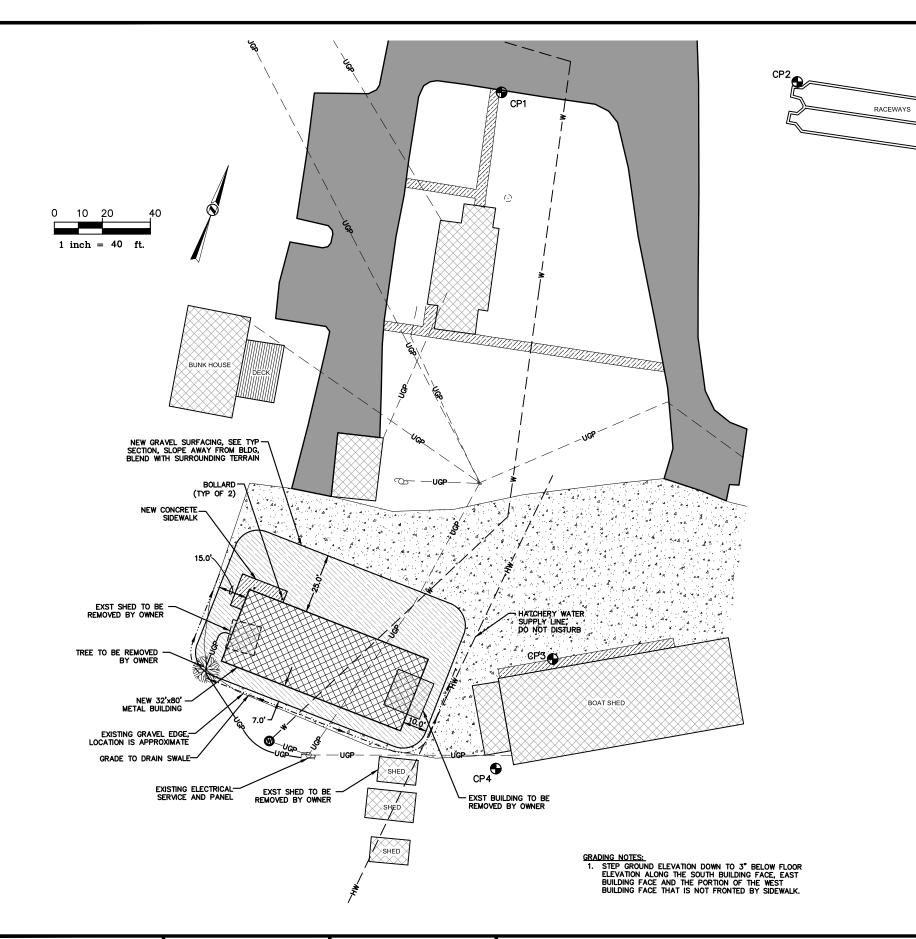
APPROVED BY: DATE:

APPROVED BY: DATE:



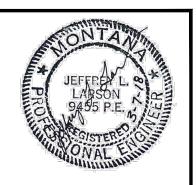
TITLE SHEET LIBBY AREA OFFICE STORAGE BUILDING FWP #7179101





DATE:

DATE:

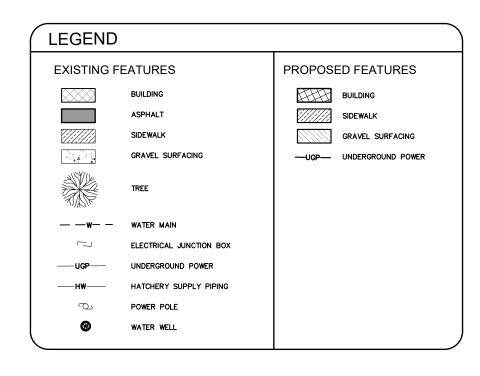


CONTROL POINT TABLE					
POINT	NORTHING	DESCRIPTION			
CP1	10,000.00	5,000.00	100.00	IRON PIN	
CP2	10,004.31	5,123.21	100.33	IRON PIN	
CP3⊕	9,763.88	5,021.33	101.80	IRON PIN	
CP4	9,718.21	4,977.61	101.91	IRON PIN	

ASSUMED DATUM

BUILDING CORNER COORDINATES				
CORNER	NORTHING	ELEVATION		
NW	9,792.86	4,894.94	102.50	
NE	9,763.05	4,883.31	102.50	
SE	9,733.96	4,957.83	102.50	
SW	9,763.77	4,969.47	102.50	

ASSUMED DATUM



J. LARSON	MARCH 7, 2018
DRAWN BY:	DATE:
J. LARSON	MARCH 7, 2018
CHECKED BY:	DATE:

REVISED BY:	DATE:	APPROVED BY:
J. LARSON	MARCH 7, 2018	
APPROVED BY:	DATE:	APPROVED BY:



SITE PLAN
LIBBY AREA OFFICE STORAGE BUILDING
FWP #7179101



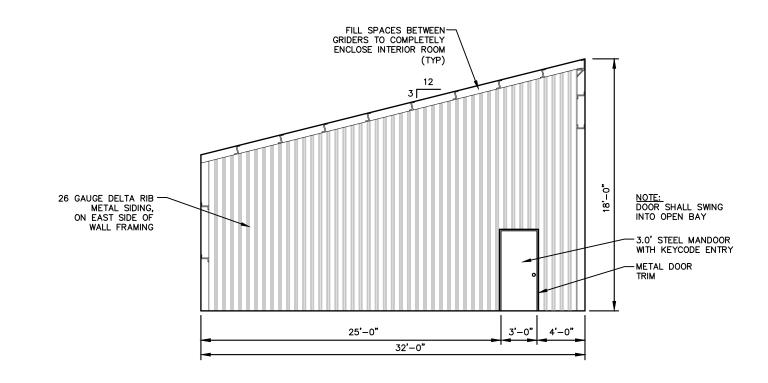
#### **CONSTRUCTION NOTES:**

- ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH "MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS", SIXTH EDITION (MPW).
- 2. BEFORE DIGGING, CALL 811 FOR LOCATION OF EXISTING UTILITIES.
- 3. CRUSHED BASE COURSE SHALL BE 1" MINUS PER MPW SPECIFICATIONS.
- 4. CONCRETE SLABS AND SIDEWALK SHALL BE REINFORCED WITH FIBER MESH.
- 5. CRUSHED TOP SURFACING FOR GRAVEL SURFACING SHALL MEET THE FOLLOWING SPECIFICATIONS INCLUDING BINDER OR BLENDING MATERIAL:

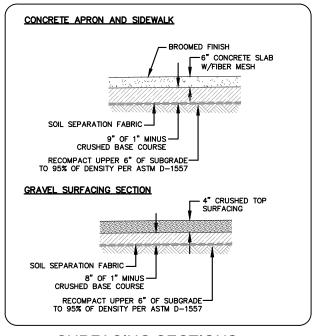
SIEVE SIZE	% PASSIN
3/4" SIEVE	100%
No. 4 SIEVE	40-80%
No. 10 SIEVE	25-60%
No. 200 SIEVE	8-20%

IN ADDITION, THE PORTION PASSING THE NO. 200 SIEVE CANNOT EXCEED 2/3 OF THE PORTION PASSING THE #40 SIEVE; THE MAXIMUM LIQUID LIMIT FOR THE MATERIAL PASSING THE NO. 40 SIEVE SHALL NOT EXCEED 35, WHILE THE PLASTICITY INDEX CAN VARY BETWEEN 3 AND 10; THE WEAR FACTOR SHALL NOT EXCEED 50% AT 500 REVOLUTIONS; AND AT LEAST 20% OF THE AGGREGATE RETAINED ON NO. 4 SIEVE SHALL HAVE A FRACTURED FACE.

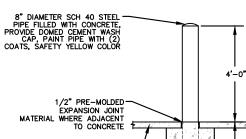
- CRUSHED TOP SURFACE SHALL BE PLACED AND COMPACTED AS IDENTIFIED IN MPW SPECIFICATION 02/235 CRUSHED BASE COURSE.
- ALL EXCAVATION AND EMBANKMENT ON THIS PROJECT, SHALL MEET THE REQUIREMENTS OF MPW SPECIFICATION 02/230 STREET EXCAVATION, BACKFILL AND COMPACTION, UNLESS OTHERWISE INDICATED.
- 8. CONCRETE SHALL BE M-4000 PER MPW SPECIFICATIONS. ALL REBAR #4 AND LARGER SHALL BE ASTM GRADE 60, #3 REBAR SHALL BE ASTM GRADE 40.
- ALL HOLES DRILLED IN CONCRETE FOR BOLT EMBEDS SHALL BE THOROUGHLY CLEANED OF DUST BY BLOWING OUT THE HOLE WITH AN AIR COMPRESSOR.
- 10. COMPACTION AND CONCRETE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE MPW SPECIFICATIONS BY AN INDEPENDENT LABORATORY HIRED BY THE CONTRACTOR. SUBMIT RESULT TO BOTH OWNER AND ENGINEER. PROVIDE TESTING AS INDICATED IN THE FOLLOWING SCHEDULE:
  - -ONE TEST EACH FOR SUBGRADE AND GRAVEL AT EACH FOOTING, OR EVERY 50' FOR LINEAR FOOTINGS.
  - -SUBGRADE FOR PARKING, SIDEWALK, BUILDING SLAB AND BUILDING GRAVEL ONE TEST PER 400 SF.
  - -GRAVEL FOR PARKING, BUILDING GRAVEL, SIDEWALK AND BASE UNDER SLAB ONE TEST PER 400 SF.
- 11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILED DRAWINGS AND STRUCTURAL CALCULATIONS FOR THE BUILDING AND FOUNDATION. DRAWINGS AND CALCULATIONS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN MONTANA.
- 12. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A BUILDING PERMIT FROM THE STATE OF MONTANA. THE COST OF THE PERMIT SHALL BE PAID BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE CONTRACTORS BID.
- 13. PROVIDE ONE FIRE EXTINGUISHER AND CABINET AS SPECIFIED. LOCATION TO BE DETERMINED BY OWNER.
- 14. THE BASE BID INCLUDES THE CONSTRUCTION OF THE BUILDING UTILIZING AN ENGINEERED METAL BUILDING PACKAGE, WHILE DEDUCTIVE ALTERNATE #1 IS THE REDUCTION IN BID PRICE UTILIZING WOOD POST AND FRAME STYLE CONSTRUCTION.
- 15. SOIL SEPARATION FABRIC SHALL BE NON-WOVEN POLYPROPYLENE GEOTEXTILE THAT IS INERT TO BIOLOGICAL DEGRADATION AND RESISTANT TO NATURALLY OCCURRING CHEMICALS, ALKALIS AND ACIDS. SOIL SEPARATION FABRIC SHALL HAVE AN TENSILE STRENGTH (GRAB) OF 160 LBS AND SHALL BE GEOTEX 601 OR APPROVED EQUAL.



## INTERIOR WALL ELEVATION (EAST)

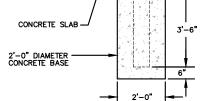


SURFACING SECTIONS



NOTE: POSITION BOLLARD TO MAINTAIN

12" CLEAR FROM BLDG FACE.



PIPE BOLLARD DETAIL
NO SCALE



J. LARSON	MARCH 7, 2018
DRAWN BY:	DATE:
J. LARSON	MARCH 7, 2018
CHECKED BY:	DATE:

REVISED BY: DATE:

J. LARSON MARCH 7, 2018

APPROVED BY: DATE:

APPROVED BY: DATE:

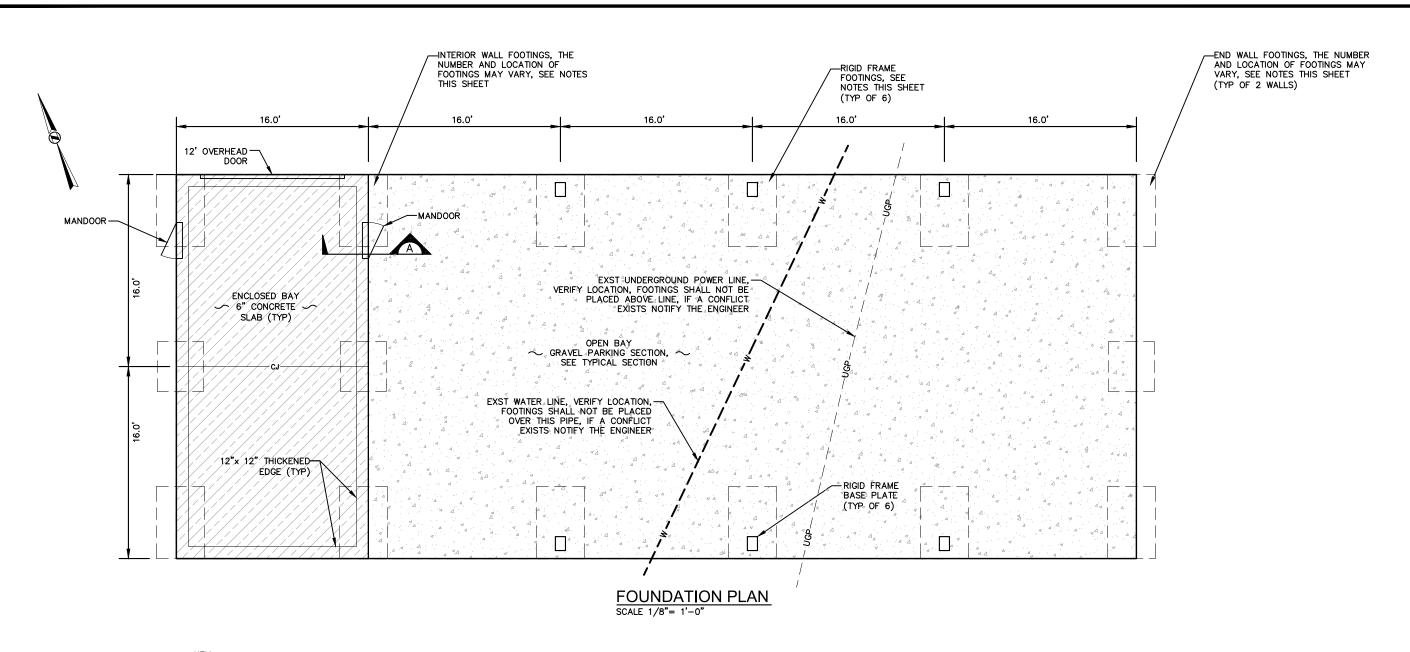
APPROVED BY: DATE:



NOTES AND DETAILS
LIBBY AREA OFFICE STORAGE BUILDING
FWP #7179101



28 ANTLER AVENUE CLANCY, MT 59634 406-443-6111 jeff@larsonce.com



KEY:

#### FOUNDATION AND FOOTING NOTES:

- THE STRUCTURAL DESIGN OF FOOTINGS IS THE RESPONSIBILITY OF THE CONTRACTOR. DETAILS AND CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR REVIEW PRIOR TO ORDERING THE BUILDING PACKAGE.
- 2. THE FOLLOWING FOOTING TYPES ARE ACCEPTABLE FOR THE BASE BID,
  METAL BUILDING STYLE CONSTRUCTION:

   TIE ROD STYLE FOUNDATION ONLY ALLOWED WITH A BELOW SLAB
  - GRADE BEAM (OR 6" BELOW GRAVEL SURFACING)
  - MOMENT RESISTING FOUNDATIONS
  - SLAB WITH HAUNCH MUST BE DESIGNED WITHOUT CONSIDERING THE CONTRIBUTION OF THE SLAB

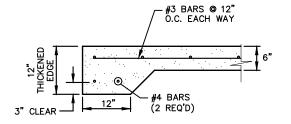
DATE:

- TRENCH FOOTING
- 3. FOOTINGS SHALL BE DESIGNED TO BE INDEPENDENT OF THE FLOOR SLAB.
- 4. SOIL BEARING CAPACITY FOR FOOTING DESIGN IS 2,000 PSF.

APPROVED BY:

 A MODULUS OF SUBGRADE REACTION, k, OF 150 PSI MAY BE USED FOR THE SLAB DESIGN.

APPROVED BY: DATE:





- NOTES:

  1. THIS DETAIL IS TYPICAL ALONG ALL EDGES
  OF THE BUILDING SLAB
- 2. INTERRUPT THICKENED EDGE SLAB AT RIDGID FRAME FOOTINGS AS NECESSARY.
- 3. THIS DETAIL IS THE MINIMUM SECTION ALLOWED. IF THE STRUCTURAL DESIGN REQUIRES A LARGER THICKENED EDGE, OR DIFFERENT REINFORCING, THE STRUCTURAL DESIGN SHALL SUPERCEDED THIS DETAIL.



J. LARSON	MARCH 7, 2018
DRAWN BY:	DATE:
J. LARSON	MARCH 7, 2018
CHECKED BY:	DATE:

REVISED BY: DATE:

J. LARSON MARCH 7, 2018

APPROVED BY: DATE:



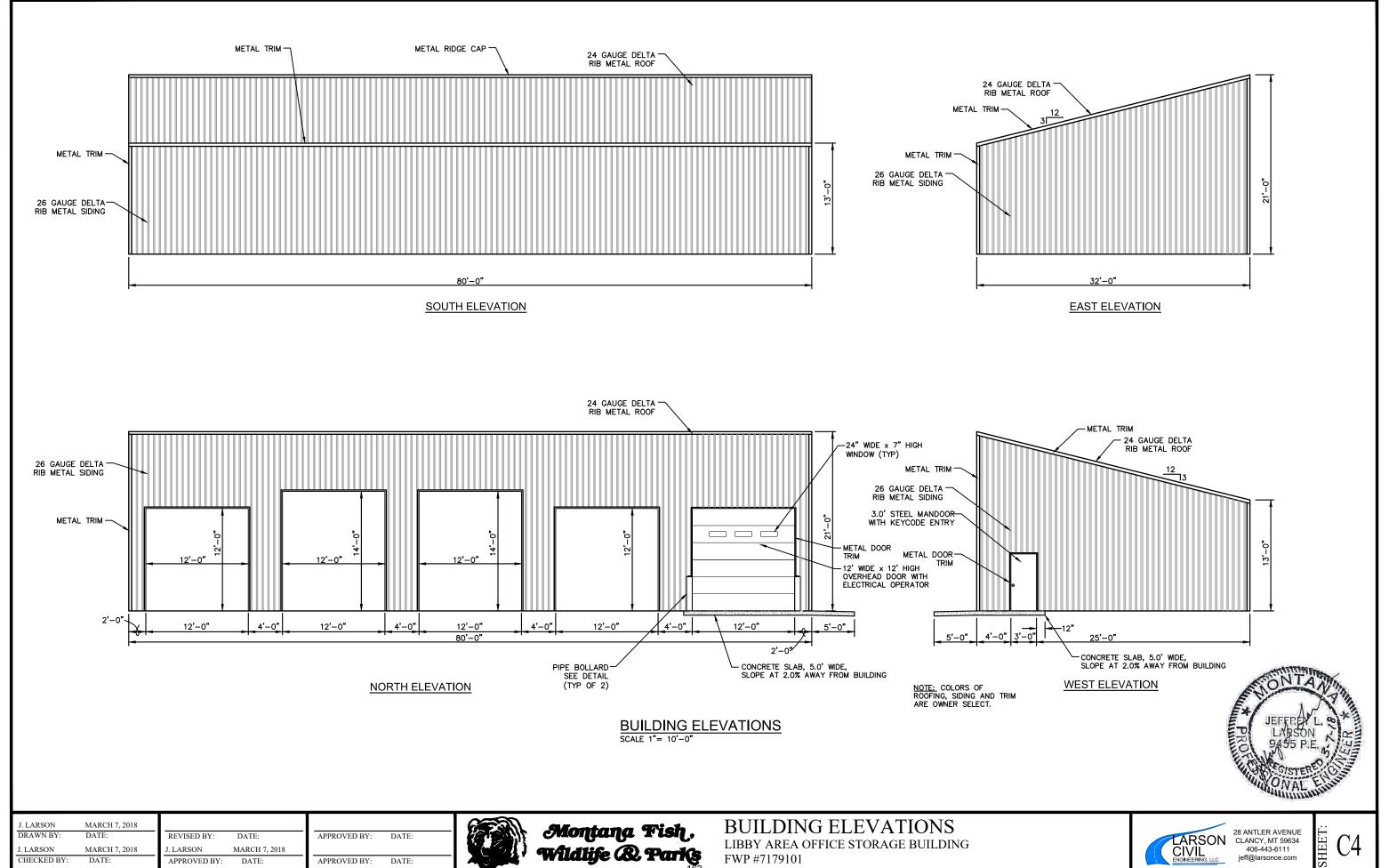
Montana Fish, Wildlife & Parks

BUILDING FOUNDATION PLAN LIBBY AREA OFFICE STORAGE BUILDING

FWP #7179101



28 ANTLER AVENUE CLANCY, MT 59634 406-443-6111 jeff@larsonce.com



FWP #7179101

J. LARSON

CHECKED BY:

MARCH 7, 2018

DATE:

J. LARSON

APPROVED BY:

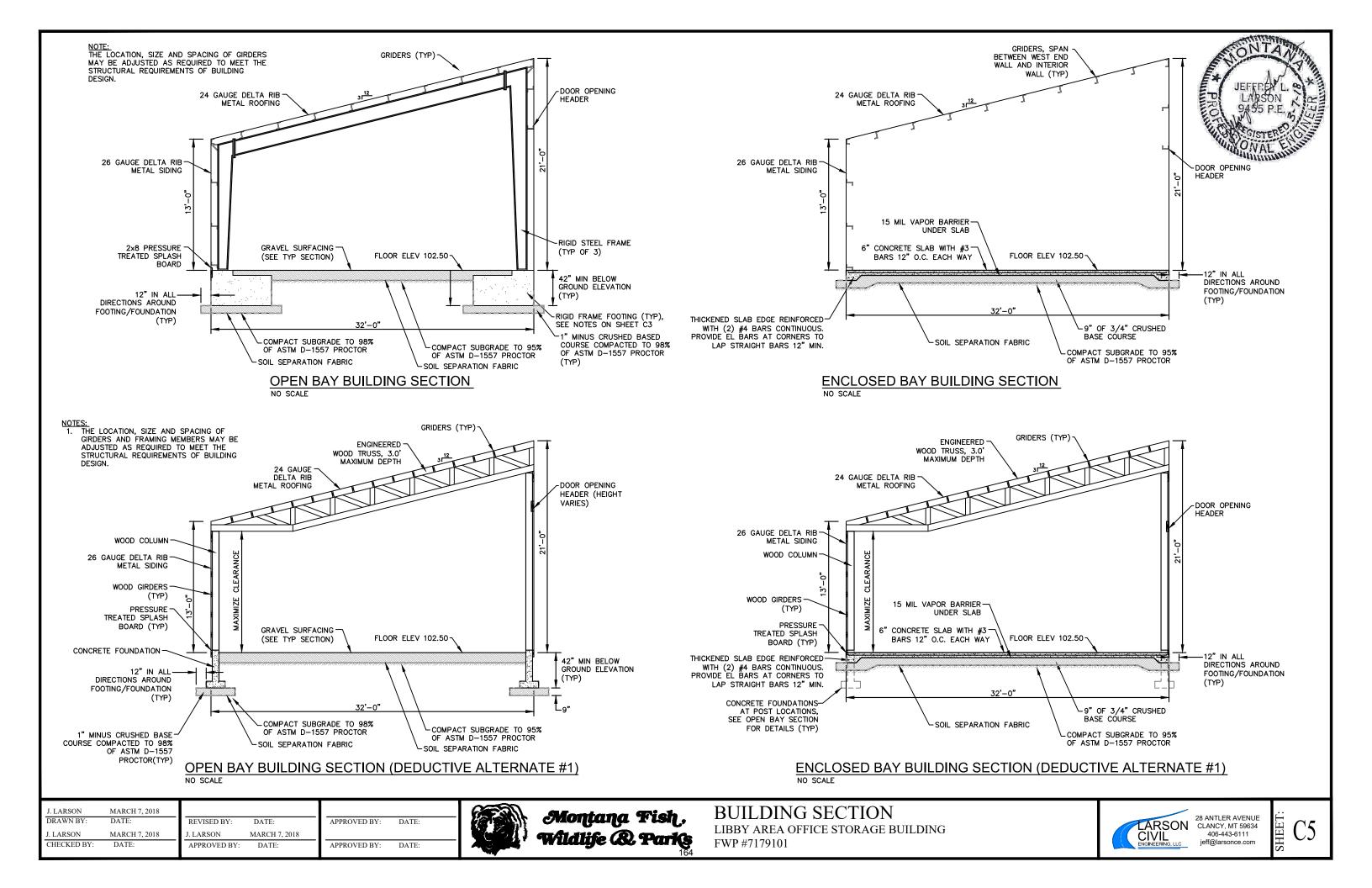
MARCH 7, 2018

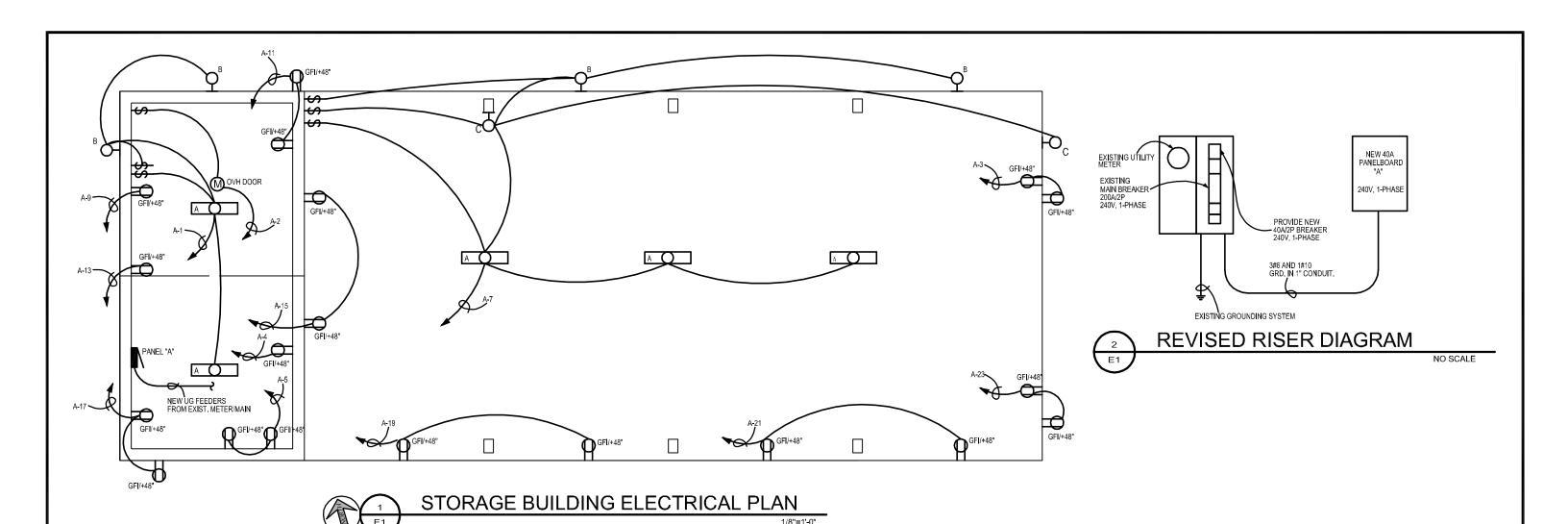
APPROVED BY: DATE:

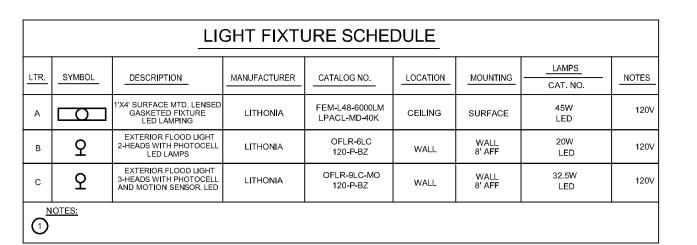
DATE:

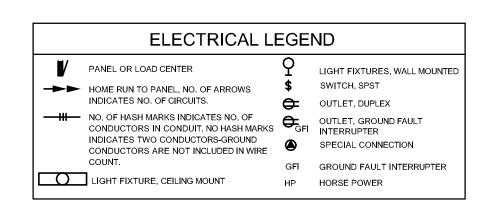
LARSON CIVIL
ENGINEERING, LLC

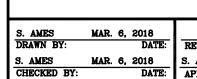
28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com











EVISED BY:			DATE:	APPROVED	BY:	D.
AMES	MAR.	6,	2018			
PPROVED BY:			DATE:	APPROVED	BY:	D.



ELECTRICAL PLAN
LIBBY AREA OFFICE STORAGE BUILDING
FWP #7179102

AMES	
ENGINEERING,	LLC

815 JADE STREET HELENA, MT 59602 PHONE/FAX: (406) 458-0494 E-MAIL: susanhames@mt.net



S/ONAL '

LOC. BLDG MFGR SQUARE D TYPE NQOD		L-L V L-N V PHASE WIRES			BUS 100/ NEUT 100/ M.C.B. 100/ TYPE M.L.O.		100A 100A	FEED		SURFACE BOTTOM 20" 5.75"			NOTES		FED FROM 40A/2P BREAKER IN EXISTII METER/MAIN ON OF BUILDING								
REMAF		*ALL C	IRCU INAT	JIT BRE	RS ONLY, HACR BREAKI AKERS SHALL BE RATEL TH THE CURRENT LIMITIN	0 10,000	O AIC	AND LI	ISTED	FOR SI	ERIES		CTUF										
CKT		AKER						USE			LOAD(				USE						AKER		CKT
NO.		POLE	Т		LOAD DESCRIPTION	REC		HTR	MTR	MISC	L1	L2	REC	LTS	HTR	MTR	MISC	LOAD DESCRIPTION	WIRE	AMP	POLE	T	NO.
1	20	1		#12	LIGHTS		1				130 830					1		OVH DOOR	#12	20	1		2
3	20	1		#12	RECEPTS	1						360 180	1					RECEPTS	#12	20	1		4
5	20	1	G	#12	RECEPTS	1					360		·										
7	20	1		#12	OPEN BAY LTS		1					240						SPARE		20	1		6
	00			040	DEOCRATO						400							SPARE		20	1		8
9	20	1		#12	RECEPTS	1					180							SPARE		20	1		10
11	20	1		#12	RECEPTS	1						360						ODADE		00			40
13	20	1		#12	RECEPTS	1					180							SPARE		20	1		12
4.5	00			1140	DEGERTO							200						PROVISION					14
15	20	1		#12	RECEPTS	1						360						PROVISION					16
17	20	1		#12	RECEPTS	1					180							PROVISION					40
19	20	1		#12	RECEPTS	1						360						PROVISION					18
	-				550555													PROVISION					20
21	20	1		#12	RECEPTS	1					360							PROVISION					22
23	20	1		#12	RECEPTS	1						360						DDOMOION					
											2220	2220						PROVISION				$\square$	24
TOTAL CONNECTED LOAD						4440	VA		CONNECTED LOAD  REC 1ST 10KVA 3.2 KVA  REC REMAINING KVA		DIV. 100% 50%	3.2	IAND KVA KVA										
BREAKER TYPES							LOAD/	PHASE	LIGHTING 0.4 KVA  RES HEAT KVA		KVA	125% 125%	0.4	KVA KVA									
N = NORMAL							50%	Α	MOTORS 0.8 KVA			KVA	100%	0.8	KVA								
S = S G = G		IRIP									50%	В	M			MAND	LOAD AMPS	KVA	25%	4.4	KVA KVA AMPS		

# **Electrical Specifications**

Scope: All electrical work under this contract as shown on the plans and indicated in the specifications. Work shall be performed by a licensed and bonded contractor utilizing tradesmen skilled in the art and in accordance with acceptable practices. All work shall comply with local, state, and the National Electrical Code, latest edition.

Permits: The electrical contractor shall secure all permits in connection with his work.

Work Included: All lighting and power systems including fixtures, devices, boxes, conduit, disconnects, motor starters, etc. Provide and install all incidental items required for a complete and functioning system. Service equipment, motors, etc. to be located and installed as shown on the plan. Deviations shall be approved prior to installation by the architect and/or engineer.

Tests: Prior to tests or usage, all switches, panels, devices shall be in place. All branch ficruitis shall be free of faults or shorts. The complete installation and all components shall have a resistance between conductors and between conductors and ground as specified by the N.E.C.

Ground: There shall be continuity of ground throughout the system. System ground to comply with N.E.C. requirements.

Materials: All materials such as receptacles, switches, conduit, conductors, panelboards, devices, fixtures, etc. to be new and bear the U.L. label or to conform to applicable standards.

Guarantee/Warranty: Contractor guarantees that all work and plant will be free from defects of materials and workmanship for a period of one (1) year from the date of final acceptance. Contractor further agrees that he will replace or repair all defective equipment and installation that become defective during the term of the warranty. This does not include excessive abuse or damage inflected by the owner and/or others.

Manufacturers Directions, Procedures and Operating Instructions: Manufacturers materials, and equipment applied, installed, connected, erected, used, cleaned, and conditioned as per manufacturers directions or recommendations prior to installation. Installation: All equipment, circuitry, etc. shall be installed as follows or as specified otherwise. The electrical contractor shall verify all nameplate ratings of equipment to be connected and verify electrical compatibility and code compliance. Manufacturer's

recommendations shall take precedence unless verified otherwise.

Conductors and Cable: All conductors shall be copper with a weather resistant thermoplastic cover. No branch circuit conductors shall be smaller than #12 unless for low voltage wiring.

Motor Circuits: Motors and circuitry to be installed and connected as indicated on the plan. All motors to be provided with a disconnecting means per the N.E.C. If fractional horsepower motors do not have an integral disconnecting means such as a plug or snap switch, electrical contractor to provide and install an acceptable disconnecting means. Equipment connected with flexible conduit with green jacketed ground wire within conduit-to-conduit system or equipment ground. Connect for correct rotation.

Conduits: PVC schedule 40 acceptable where routed underground. If PVC is used, provide ground wire. Compression couplings in wet locations and in concrete walls and floors. Romex and MC cable are not acceptable.

Outlet Boxes:

Fixture and Special Purpose 4" x 4" x 2 1/8"

Duplex, Switch and Telephone 3" x 2" x 2 3/4"

Special Purpose Outlet 4" x 4" x 2 1/8"

Wire and Cable: Type THHN or THWN for application or as noted otherwise. Color code in accord with the NEC.

Current Characteristics: 120/240V, 1 phase, 3W

Wiring Devices: Product: Leviton, P&S, Hubbell, and Slater acceptable. Switch and receptacle colors; selected by owner. Devices and finish plates to match in color - no exceptions.

- 1. Standard switches 20 amps, 277 volt with matching smooth plastic plate. Mount 44" to centerline.
- a. 1 pole Single pole toggle, 20A, Model No. CSB1-20
- 2. Duplex outlet Nema standard WD 1 and 6, 20 amps, 125 volts grounded Model No. BR20 complete with smooth matching plate. Mount centerline at 18".
- 3. GFCI receptacle, 20 amp, 125 volt Model number 6899I with matching plate zinc weather resistant cover where indicated W.P.

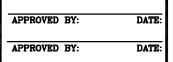
Equipment Connections: Electrical contractor to coordinate all work where he is responsible for connecting equipment supplied by others. Verify equipment plug configurations and direct connect or install receptacle to match plug. Verify box mounting heights prior to rough in.

Disconnect and Schedule of Control Equipment: Product of General Electric, Square D, Cutler Hammer, and Westinghouse acceptable. Model, style, etc. as scheduled. Install fuses for disconnects if required and heaters for motor controllers as recommended by motor equipment supplier. Coordinate controls wiring as indicated on the schedule and make allowances there of.



S. AMES	MAR.	6,	2018
DRAWN BY:			DATE:
S. AMES	MAR.	6,	2018
CHECKED BY:			DATE:

REVISED BY:			DATE:	APPROVED	BY
S. AMES	MAR.	6,	2018		
APPROVED BY:			DATE:	APPROVED	BY
				l	





ELECTRICAL PLAN
LIBBY AREA OFFICE STORAGE BUILDING
FWP #7179102



815 JADE STREET HELENA, MT 59602 PHONE/FAX: (406) 458-0494 E-MAIL: susanhames@mt.net